January 7, 1998

TEL:805-498-2111 FAX:805-498-3804 WEB:http://www.semtech.com

AXIAL LEADED HERMETICALLY SEALED SUPERFAST RECTIFIER DIODE

- Very low reverse recovery time
- Hermetically sealed with Metoxilite fused metal oxide
- Low thermal impedance
- Low switching losses
- Soft, non-snap off, recovery characteristics

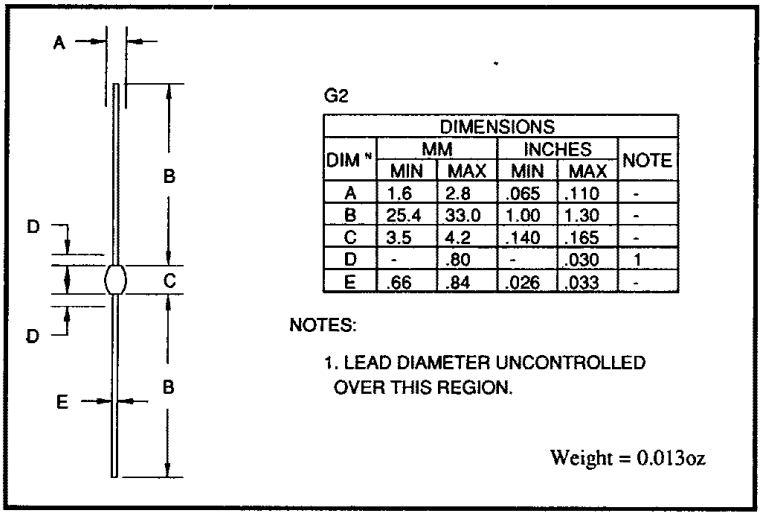
QUICK REFERENCE DATA

- V_R = 200 - 400V
- I_F = 2.1A
- t_{rr} = 50nS
- I_R = 10µA

ABSOLUTE MAXIMUM RATINGS (@ 25°C unless otherwise specified)

	Symbol	USC1104	USC1105	USC1106	Unit
Working reverse voltage	V_{RWM}	200	300	400	V
Repetitive reverse voltage	V_{RRM}	200	300	400	V
Average forward current (@ 55°C, lead length = 0.375")	$I_{F(AV)}$	←	2.1	→	A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	I_{FRM}	←	9.0	→	A
Non-repetitive surge current (t_p = 8.3mS, @ V_R & T_{jmax})	I_{FSM}	←	20	→	A
Storage temperature range	T_{STG}	←	-55 to +150	→	°C
Operating temperature range	T_{OP}	←	-55 to +150	→	°C

MECHANICAL



G2

DIMENSIONS					
DIM	MM		INCHES		NOTE
	MIN	MAX	MIN	MAX	
A	1.6	2.8	.065	.110	-
B	25.4	33.0	1.00	1.30	-
C	3.5	4.2	.140	.165	-
D	-	.80	-	.030	1
E	.66	.84	.026	.033	-

NOTES:

1. LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

Weight = 0.013oz

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ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	USC1104 USC1105 USC1106	Unit
Average forward current max. (pcb mounted; T_A = 55°C)			
for sine wave	$I_{F(AV)}$	1.0	A
for square wave (d = 0.5)	$I_{F(AV)}$	1.1	A
Average forward current max. (T_L = 55°C; L = 3/8")			
for sine wave	$I_{F(AV)}$	2.0	A
for square wave	$I_{F(AV)}$	2.1	A
I^2t for fusing (t = 8.3mS) max.	I^2t	1.7	A^2S
Forward voltage drop max. @ I_F = 1.0A, T_j = 25°C	V_F	1.25	V
Reverse current max.			
@ V_{RWM}, T_j = 25°C	I_R	10	µA
@ V_{RWM}, T_j = 100°C	I_R	200	µA
Reverse recovery time max. 0.5A I_F to 1.0A I_R. Recovers to 0.25A I_{RR}.	t_{rr}	50	nS
Junction capacitance typ. @ V_R = 5V , f = 1MHz	C_j	25	ρF

THERMAL CHARACTERISTICS

	Symbol	USC1104 USC1105 USC1106	Unit
Thermal resistance - junction to lead			
Lead length =0.0"	$R_{\theta JL}$	7	°C/W
Lead length = 0.375"	$R_{\theta JL}$	38	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta JA}$	95	°C/W

Mouser Electronics

Authorized Distributor

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USC1104 USC1105 USC1106